

What is claimed is:

1. A computer implemented method of deserializing a data transmission, which is coded in one of a plurality of different communication protocols, comprising the steps of:
receiving the data transmission, wherein the data transmission includes a clock portion
and a data portion;
identifying the communication protocol the data transmission is encoded in;
providing a plurality of programmable hardware circuits and programmable software
modules to provide a plurality of deserializing functions, the hardware circuits
providing deserializing functions that are applicable to a first of the communication
protocols, the software modules providing deserializing functions that are applied to
a second of communication protocols;
determining a first of said programmable hardware circuits and a first of said
programmable software modules that are required to deserialize the data transmission
according to the determined communication protocol;
programming said first programmable hardware circuit and first programmable software
module with parameters required to deserialize the data transmission according to the
determined transmission protocol;
utilizing said programmed first plurality of programmable hardware circuit and said
programmed first programmable software modules to apply a plurality of
deserializing functions to deserialize the data transmission according to the identified
transmission protocol, wherein the deserializing functions include:

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inverting the polarity of the data transmission if required by the identified communication protocol;

detecting a start condition for the data transmission according to the programmed parameters;

separating a clock portion and a data portion of the data transmission according to the programmed parameters if required by the identified communication protocol if required by the identified communication protocol;

dividing the clock portion by a factor required by the identified communication protocol according to the programmed parameters if required by the identified communication protocol;

determining the data integrity of the data transmission according to the programmed parameters if required by the identified communication protocol;

detecting an end of packet pattern that signifies the end of the data portion according to the programmed parameters if required by the identified communication protocol;

decoding the data portion of the data transmission according the decoding protocol required by the identified transmission protocol;

unstuffing bits from the data transmission according to the programmed parameters if required by the identified communication protocol;

identifying a synchronization pattern utilized by the determined transmission protocol to determine if the data transmission is being sampled at the correct rate and utilizing the determined synchronization pattern to determine if the data

transmission is being sampled at the correct rate if required by the identified communication protocol;

storing the decoded data in a data storage medium, which includes a variable size data buffer according to the programmed parameters; and

for each of the deserializing functions applied, generating an interrupt and transmitting the interrupt to a CPU.

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